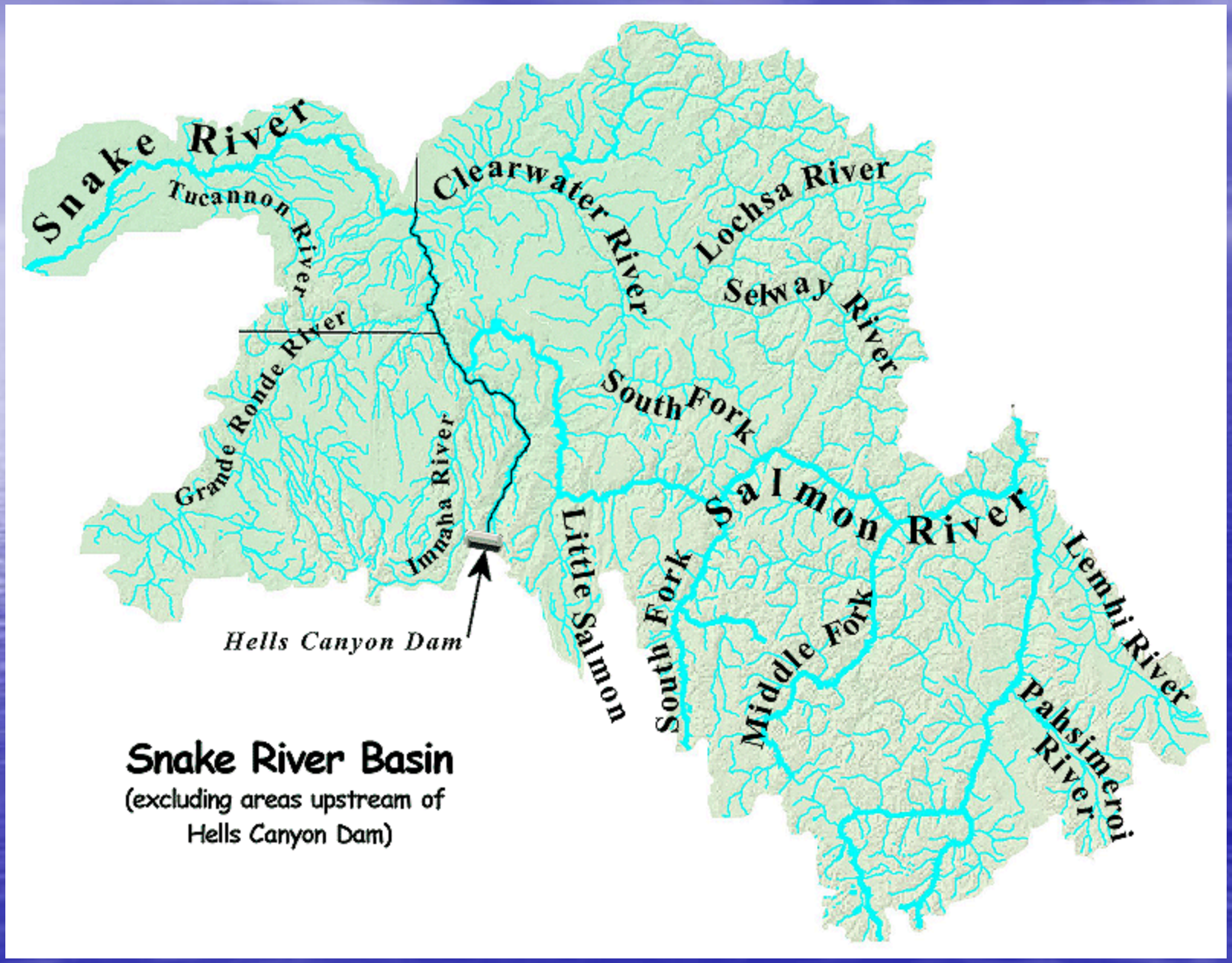
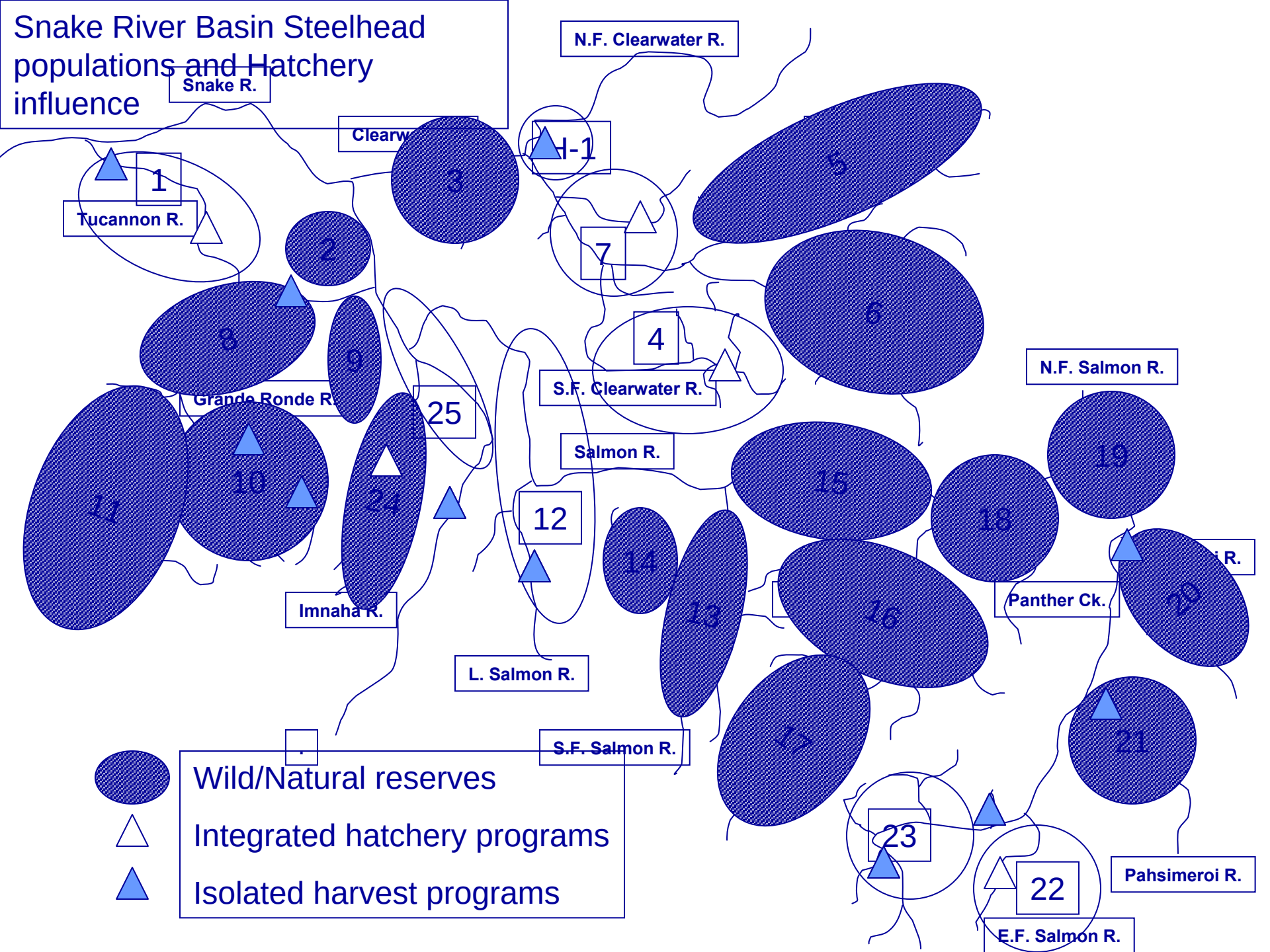
# Snake River Basin Steelhead ESU

Herb Pollard


Snake River
Tucannon River
Grande Ronde River
Imnaha River
Clearwater River
Lochsa River
Selway River
South Fork
Salmon River
Little Salmon
South Fork
Middle Fork
Lemhi River
Pahsimeroi River
Hells Canyon Dam
Snake River Basin
(excluding areas upstream of
Hells Canyon Dam)

# There are 25 natural populations and one hatchery population identified by the TRT in the Snake River Basin Steelhead ESU

- 15 populations are managed as wild/ natural fish only
- There are 5 integrated recovery/reintroduction programs
- There are 10 isolated harvest augmentation programs


Snake River Basin Steelhead populations and Hatchery influence
N.F. Clearwater R.
Snake R.
Clearw
H-1
1
Tucannon R.
2
3
5
7
6
4
8
9
Grande Ronde R.
25
S.F. Clearwater R.
N.F. Salmon R.
Salmon R.
19
10
11
24
12
15
18
14
13
16
Panther Ck.
20
Imnaha R.
L. Salmon R.
17
21
S.F. Salmon R.
23
22
Pahsimeroi R.
E.F. Salmon R.
Wild/Natural reserves
Integrated hatchery programs
Isolated harvest programs

# Snake River Basin Steelhead ESU TRT populations

- 1 Tucannon R. (SNTUC)
- 2 Asotin Creek (SNASO)
- 3 Lower Clw A-run (CRLMA)
- 4 S. Fk Clearwater (CRSFC)
- 5 Lolo Cr (CRLOL)
- 6 Selway R (CRSEL)
- 7 Lochsa R (CRLOC)
- H-1 Dworshak NFH/ NFk Clw
- 8 Lower Grande Ronde
- 9 Joseph Creek (GRJOS)
- 10 Wallowa River (GRWAL)
- 11 U.Grande Ronde(GRUMA)
- 12 L. Salmon R (SRLSR)
- 13 Sfk Salmon (SFMAI)
- 14 Secesh R (SFSEC)
- 15 Chamberlain Cr (SRCHA)
- 16 Lower Middle Fk (MFBIG)
- 17 Upper Middle Fk(MFUMA)
- 18 Panther/Owl Cr (SRPAN)
- 19 North Fk (SRNFS)
- 20 Lemhi R (SRLEM)
- 21 Pahsimeroi R (SRPAH)
- 22 East Fork (SREFS)
- 23 U. Main Salmon(SRUMA)
- 24 Imnaha (IRMMT)
- 25 Snake Hells Can (SNHCT)

# ESU Artificial Propagation Programs Local stocks

- Tucannon River: 150,000 smolts, 25,000 parr of local stock
- Little Sheep Creek (Imnaha Basin): 330,000 smolts of local stock released in Big and Little Sheep Creeks
- East Fork Salmon River: 50,000 smolts, local stock in supplementation experiment

# Dworshak Stock – in ESU Program

- Dworshak Fish Hatchery: 2,300,000 smolts of in-ESU stock released for mitigation/harvest augmentation
- Clearwater Fish Hatchery: 900,000 Smolts of Dworshak stock released in S.Fk Clearwater and tributaries for harvest enhancement and supplementation
- Lolo and Clear Creeks: 150,000 Dworshak stock smolts released in Middle Fork Clearwater Tribs for supplementation experiments

# Non-ESU Steelhead Artificial Propagation Programs – OR & WA

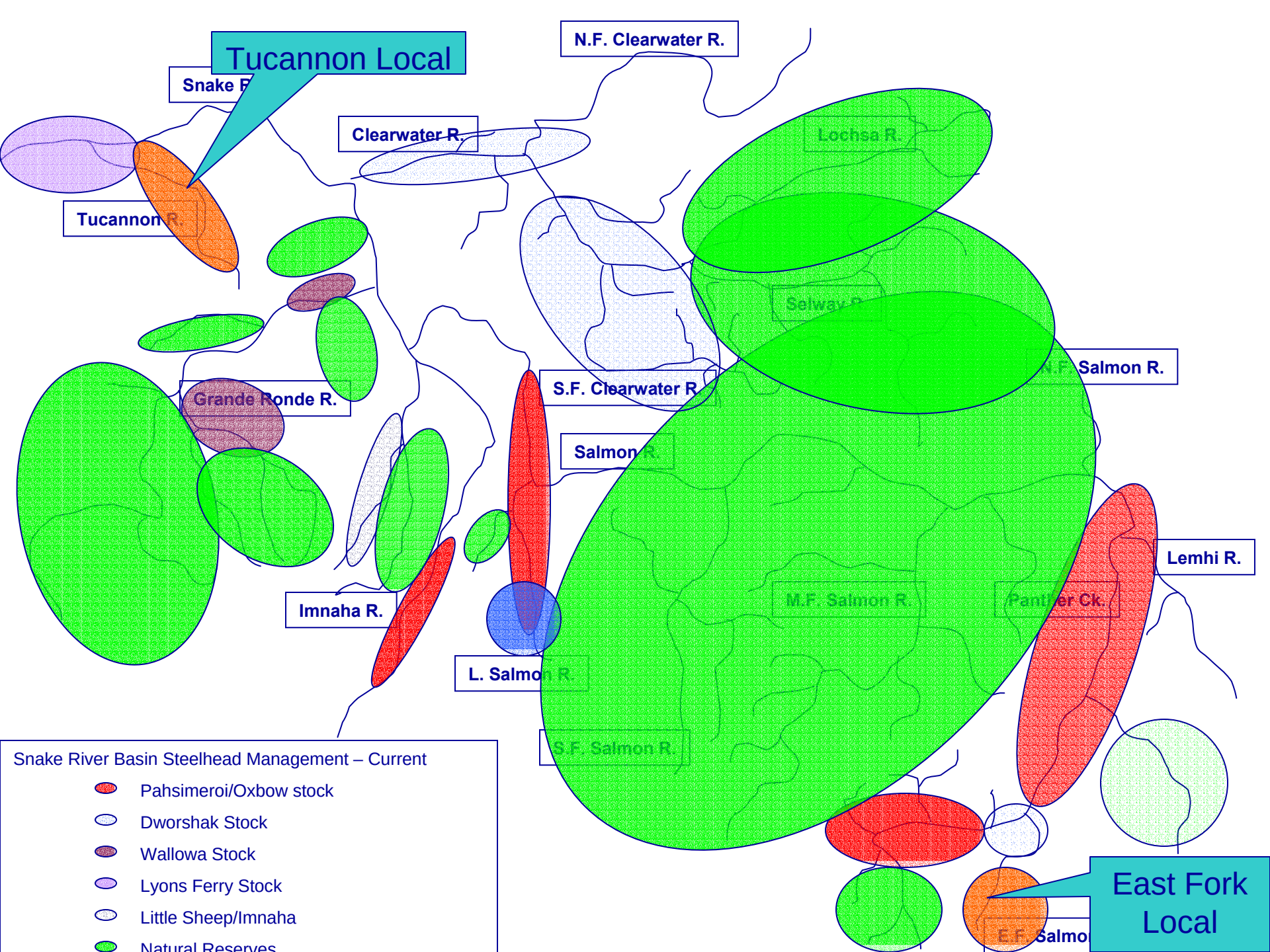
- Cottonwood Pond – 160,000 smolts released into Lower Grande Ronde – Wallowa Stock localized to Cottonwood
- Wallowa – 870,000 smolts released into Wallowa River at Wallowa Hatchery and Big Canyon Satellite pond
- Lyons Ferry – 60,000 smolts direct release at hatchery and 135.000 in the lower Tucannon River – non-ESU composite stock

# Non-ESU Steelhead Artificial Propagation Programs – Idaho

- Little Salmon River – 950,000 smolts of Oxbow and Dworshak stocks released into Little Salmon River
- Pahsimeroi River – 900,000 smolts into a tributary of the Upper Salmon River
- Salmon River B-run – 545,000 Dworshak B stock into East Fork Salmon River and Squaw Creek Pond
- Upper Salmon A-run – 770,000 Sawtooth stock smolts at Sawtooth Hatchery and 550,000 direct-release in upper Salmon

# Hatchery steelhead production in the Snake River is 10.5 million smolts

- 1.5 million are released in integrated recovery programs or reintroduction actions
- 7.5 million are in isolated harvest programs which are dead-ended at weirs or in un-productive habitat
- 1.5 million are in direct stream releases or unevaluated outplants


Tucannon Local
N.F. Clearwater R.
Snake R.
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Lochsa R.
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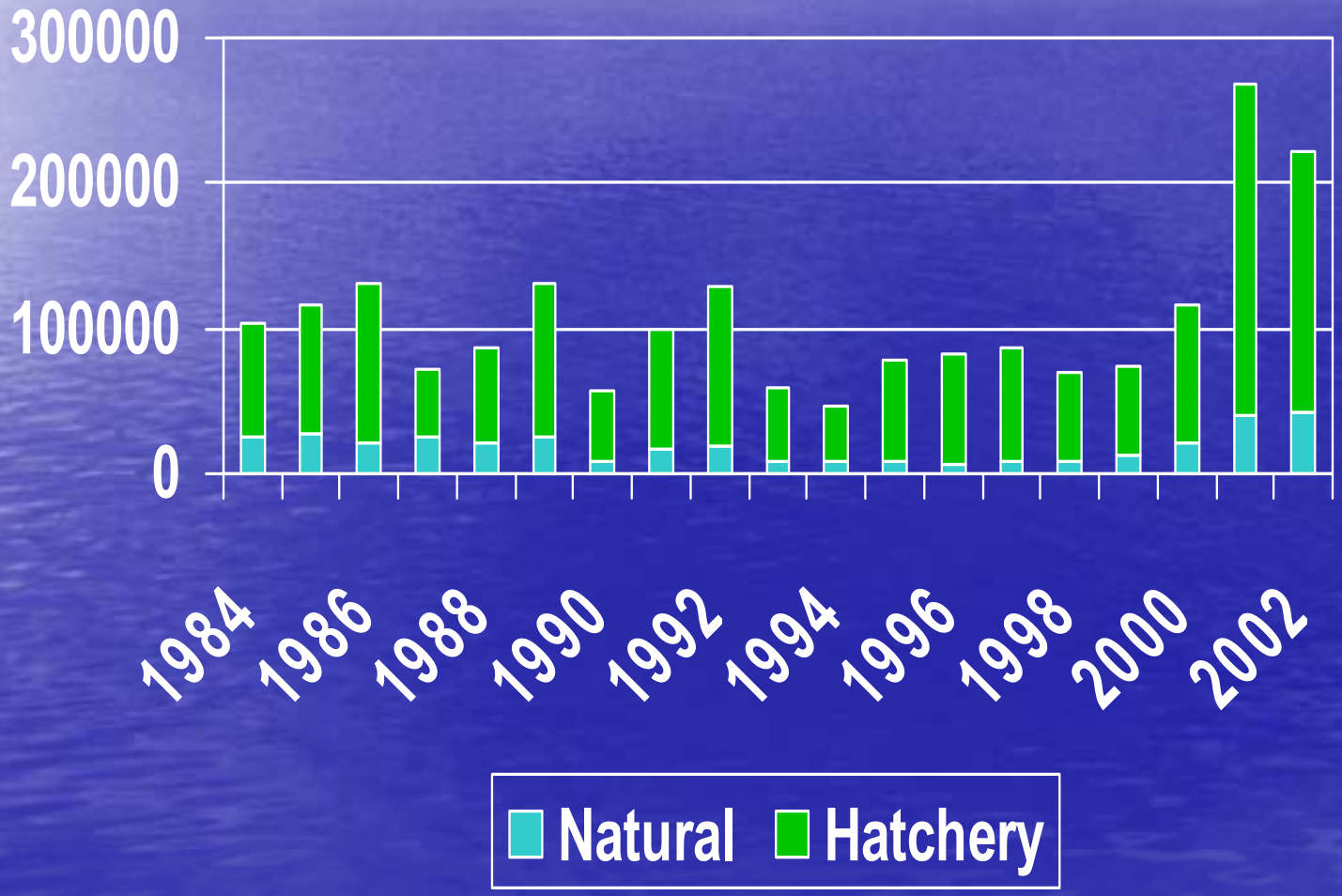
S.F. Clearwater R.
Grande Ronde R.
Salmon R.
Lemhi R.
Imnaha R.
M.F. Salmon R.
Panther Ck.
L. Salmon R.
S.F. Salmon R.
E.F. Salmon
East Fork Local
Snake River Basin Steelhead Management – Current
Pahsimeroi/Oxbow stock
Dworshak Stock
Wallowa Stock
Lyons Ferry Stock
Little Sheep/Imnaha
Natural Reserves

# Snake River Steelhead Abundance Trend



# Hatchery Listing Policy

Effects of hatchery fish on the likelihood of extinction of an ESU, depend on how hatchery fish affect four key attributes.

# Effects on Abundance of ESU

- The Tucannon and East Fork local stock programs have recently been initiated and have not produced enough adult returns to evaluate.
- The Little Sheep program has increased numbers of in-ESU fish, but has not contributed to increased natural production.
- Dworshak-based programs produce millions of in-ESU smolts and return 10s of thousands of adults, but contribution to natural production has been limited

# Effects on Productivity of ESU

- Most of the steelhead returns are dead-ended at hatchery weirs or in unproductive main-stem habitats.
- There is concern that hatchery strays could reduce natural productivity, but strays are not detected in most productive natural habitats.

# Effects on Diversity of ESU

- Isolated hatchery programs are not believed to impact diversity
- Hatchery weirs block hatchery-origin fish, pass natural-origin returnees
- The small, local-stock programs may help preserve diversity
- Widespread use of the single B-run hatchery stock (Dworshak) could be a risk to natural population diversity
- Unmarked, non-ESU releases in tributaries are an unmeasured risk

# Effects on Spatial Structure of ESU

- Release of Dworshak stock in South Fork Clearwater may extend range of natural B-run production.

# Effects of Artificial Propagation on VSP Attributes for Snake River Basin Steelhead

| Viability Criteria | BRT VSP Risk Score | Decreases Risk | Neutral or Uncertain | Increases Risk |
|---|---|---|---|---|
| Abundance | 3.1 | √ | | |
| Productivity | 3.2 | | √ | |
| Spatial Structure | 2.5 | √ | | |
| Diversity | 3.1 | | √ | |

| | Endangered | Threatened | Not Warranted |
|---|---|---|---|
| **BRT Findings:** | 16% | 74% | 10% |

**Recommendation:** No Change: Threatened